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From individual to collective social remittances: the role of translocal moorings in climate adaptation in Morocco

Rachael Diniega^{a,b} , Simon A. Bunchuay-Peth^a  and Patrick Sakdapolrak^{a,b} 

^aDepartment of Geography and Regional Research, University of Vienna, Vienna, Austria; ^bResearch Platform Mobile Cultures and Societies, University of Vienna, Vienna, Austria

ABSTRACT

Remittances from migrants have been increasingly recognized as potential contributors to climate adaptation in origin communities. This paper examines social remittances and the role of translocal actors within the context of environmental and climate change. We particularly emphasize that also the lack of movements (immobilities and moorings) plays a crucial role in social remittance pathways, which has so far mostly been neglected. Drawing from ethnographic qualitative research, we examine a case study from Skoura M'Daz, Morocco, where a growing ecotourism sector is being shaped by both migrant and non-migrant actors. We found that immobilities and moorings play a pivotal role in the social remittance pathway in several forms, including: (a) the translocal embeddedness of key actors, (b) the development of local know-how for implementing remittances, and (c) the transformation of social remittances as agents stop and go among origins, transit, and destination areas. Thus, this research suggests that a translocal im/mobility approach, rather than a focus only on the act of migration, opens up new layers of spatial analysis and understanding of social remittances in responding to environmental and climate change.

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Introduction

Climate change effects are spelling changes for people's livelihoods around the globe, highlighting the importance for adaptation to reduce vulnerability to such environmental risks. The recent trajectory of 'climate mobilities' (Boas et al. 2022; Cundill et al. 2021; Wiegel, Boas, and Warner 2019) has provided space to examine how human mobilities can contribute to responding and even adapting to environmental changes. With the addition of insights from the mobilities paradigm, research has opened new inquiries into the diverse forms, representations, and meanings of human, material, and immaterial mobilities as well as immobilities connected to environmental change, along with the power relationships constructing them (Boas et al. 2018; Everuss 2023; Parsons 2019). Past migration-as-adaptation research, based in the broader human mobility-environment nexus, has examined how people's migration choices or experiences could bolster their own or their household's adaptive capacities or resilience to environmental risks or shocks (Gemenne and Blocher 2017; Sakdapolrak et al.

2024). For instance, evidence suggests that diaspora groups can potentially contribute to climate adaptation through financial remittances, as a source of ‘green financing’ (Mills 2023; Chirambo 2017).

This article concentrates on social remittances, which are intangible transfers of ideas, knowledge, values, or social capital (Levitt 1998), as a potential mechanism through which mobile persons can contribute to adaptive practices. While social remittances have drawn interest in studies on climate adaptation or resilience, only a few articles connect ‘social remittances’ as a concept explicitly with the environment or climate change (Iannuzzi 2017; Van Praag 2021, 2023). Instead, scholarship on specific types of social remittances, such as knowledge transfer for agriculture, provide preliminary evidence of their potential impact on the environment. For example, changes in agricultural practices or everyday behaviors like water usage or transportation choices at the individual- or household-levels can effect environmental change (Diniega and Sakdapolrak 2025). Migrants can bring with them to destination areas their own experiences or knowledge related to agriculture or sustainability projects, develop values and goals to conserve nature from interactions in a destination area, or apply work skills or social capital for environmental activism at the community level (Fry et al. 2024; Ge, Resurreccion, and Elmhirst 2011; Hamilton and Curran 2013; Sen and Nagendra 2020).

Across Morocco, droughts have become more intense and frequent over the past decades, notably from 2015 to 2016 and then six consecutive years of drought from 2019 (Toreti et al. 2024; Verner et al. 2018). Climate change has also affected our field site of Skoura M’Daz, a small town in the Middle Atlas Mountains, placing at risk many households’ agriculture-based livelihoods. Residents have noted several environmental changes like seasonal timing changes, hotter days, and more intense flooding, calling into question economic reliance on agriculture. Therefore, several entrepreneurial residents, business owners, community leaders, and other individual actors have taken steps to build up ecotourism activities as an alternative sustainable livelihood opportunity—not only for themselves, but also the broader community. Through our research, we saw that many of the people involved in ecotourism were enacting social remittances stemming from their translocal embeddedness or repeated and ongoing mobilities around the country.

Thus, combining elements from the concept of translocality and the mobility turn, we aim to contribute to the further conceptualization of social remittances through the application of a translocal im/mobilities lens. Most research on social remittances has focused on the context of international migration and the connections between migrants and their origin (usually as a receiving area of social remittances) and destination areas (typically where social remittances are acquired and sent from). The translocal lens enables a broader spatial perspective that includes diverse geographical and temporal forms of human mobilities that lead to social remittances. Drawing from the mobilities turn, we identify not only the multiplicity of these in- and out-mobilities, but also the role of immobilities, pauses, and moorings in social remittance pathways that have influenced the burgeoning ecotourism sector in Skoura M’Daz. We ask, how do translocal im/mobilities and moorings contribute to social remittance formation, transmission, and implementation? What is the role of these im/mobilities and social remittances in responding to climate change in Skoura M’Daz, Morocco?

Data was gathered through mixed methods ethnographic research, including surveys and interviews, in the study site and surrounding region. In our results, we identify three forms of im/mobility dynamics within actors’ experiences developing ecotourism projects. We argue that immobilities and (trans)local moorings (Adey 2006; Peth, Sterly, and Sakdapolrak 2018) should also be recognized as a key aspect in social remittance implementation. From these diverse human mobilities *and* immobilities come the formation, transmission, and implementation of social remittances. Through this reframing, we draw attention to entangled webs of different

social remittances and im/mobilities involved in a case of adaptation to environmental change: the development of the ecotourism sector in Skoura M'Daz.

State of the art: social remittances

Social remittances are a unique form of exchange distinguished from other globalizing forces like media or cultural diffusion by clear identification of a person-to-person, -household, or -community transfer, which are placed in different socio-geographical settings. They have been defined by Levitt (1998) as exchanges of norms, behaviors, social capital, and knowledge across migrant connections. Some types of social remittances are incorporated, which means they can be implemented and only travel with the knowledge- or skill-holder; other types of social remittances can be transferred via communication through conversations or phone calls (Peth and Sakdapolrak, 2020b). Social remittances generally follow a three-step pathway: acquisition or formation, transfer or transmission, and outcome or implementation (Grabowska et al. 2017; Peth and Sakdapolrak, 2020b; Pinkow-Läpple and Möllers 2022). Effects can scale up, i.e. changes made by multiple households affect community structures, and scale out, wherein new ideas like agricultural practices can ripple into political or economic spheres (Levitt and Lamba-Nieves 2011; Grabowska and Engbersen 2016).

This research focuses on social remittances that have effects at the community level, which include collective social remittances and traveling ideas that scale up from individuals or households to have effects for the broader community (Levitt 2016). Levitt and Lamba-Nieves (2011) differentiate 'collective social remittances' from those at the individual level as ones that 'circulate and are harnessed in collective, organizational settings' (p. 2). Both processes can happen concurrently. For example, Filipinos who returned from agricultural work in Malaysian rubber fields promoted rubber expansion at town meetings. Meanwhile, their personal transfers of social remittances to household members and other acquaintances gradually scaled up, even resulting in transfers to non-migrants without direct migrant connections: migrant and non-migrant households started planting rubber trees, leading to large-scale rubber expansion across the community (Montefrio, Ortiga, and Josol 2014). Another example from Moldova shows how diaspora associations led to several successful community projects ranging from small-scale, such as purchasing a beehive for a high school to teach students beekeeping techniques and honey production for consumption and sale, to infrastructure projects to improve roads and garbage collection (Cingolani and Vietti 2019b). What many empirical examples have in common is that they (a) focus on international migration neglecting the role of domestic migration and small-scale mobilities and (b) do not specifically address the role of local moorings and immobility.

In this paper, we contribute to the conceptualization of social remittances in two ways. First, we expand upon their geographical dimension by adopting a translocal perspective. Second, we explore an im/mobility lens to capture the relevancy of periods of stasis in the social remittance pathway.

Spatiality of social remittances

Social remittance literature has mainly described remittances' relationship with space and place through dualities. Social remittances are often discussed in past studies as being transferred between two places, an origin and destination, or sending and receiving areas. For example, ongoing communication and travel between origin and destination can create transnational spaces of exchange and identities (Isaakyan and Triandafyllidou 2017; Järvinen-Alenius, Pitkänen, and Virkama 2010). A few papers highlight transit places as influencing social remittances (Minkoff-Zern 2012; Thompson 2011; Peth and Sakdapolrak, 2020b). It is stated that social remittances can circulate, rather than traveling in one direction, or even be transferred in-place

(Lacroix, Levitt, and Vari-Lavoisier 2016; Peth and Sakdapolrak, 2020b; White and Grabowska 2019), though there is a dearth of research on what constitutes circulation (Pinkow-Läpple and Möllers 2022). Place-based characteristics, similarities between socio-geographical settings, and distance all factor into the social remittance pathway, including likelihood of acquisition and implementation (Boccagni and Decimo 2013; Levitt 1998; Peth and Sakdapolrak, 2020b).

This geographical dimension deserves more attention (Dinięga and Sakdapolrak 2025; Pinkow-Läpple and Möllers 2022). In past social remittance literature, long-term, international migration dominates as the main initiator of the social remittance pathway. However, based on an example of political remittances exchanged within a country by Krawatzek and Müller-Funk (2020), Pinkow-Läpple and Möllers (2022) point out how underlying process of social remittances resulting from internal mobilities could be similar to those from transnational migration. White and Grabowska (2019) suggest 'short-term mobility in the form of business trips, educational exchanges, etc.' (p. 46) could also lead to social remittances. A literature review of social remittances and environmental change by Dinięga and Sakdapolrak (2025) found articles examining social remittances, or other intangible transfers not explicitly named as social remittances, stemming from diverse geographical and temporal human mobilities, including internal, local, daily, and cross-border movements. For example, the spread of agricultural practices in Laos took place through cross-border mobilities (Lagerqvist 2013), and ideas about different crops and gardening plants transferred in part through internal mobilities in the United States (Taylor and Lovell 2015).

Immobilities as coessential

Shifting focus to mobilities for social remittances highlights a lingering question: what about immobilities and long-term fixities? An im/mobilities approach to social remittances can draw on past research from the *mobility turn*. In the new mobilities paradigm (Sheller and Urry 2006), scholars across the disciplinary spectrum sought to shift perspectives of stasis being the norm and mobilities exceptional, and investigate forms, temporalities, representations, and meanings of mobilities (Boas et al. 2022; Cresswell 2010; Cresswell and Merriman 2011). Such attention also led to exploring immobilities and moorings as relational aspects to mobilities (Adey 2006), not only as binaries (Merriman 2023), but as co-creators 'that configure and enable mobilities' (Hannam, Sheller, and Urry 2006, 3). Examining immobilities has opened up new layers within migration research (Hoang 2023; Schewel 2020), including in the climate mobilities field (Boas et al. 2022; Robins et al. 2024; Suliman et al. 2019; Transiskus and Bazarbash 2024; Tschakert and Neef 2022), which could provide examples for social remittances related to environmental change.

Social remittance literature has not often used specific vocabulary of immobilities, but adjacent elements are noted. Studies discuss effects of transmitted social remittances in origin communities, for example, on non-migrant connections who did not move away (Levitt 2001; Suksomboon 2008). Immobilities can be critical to the acquisition, transmission, or implementation of social remittances for remitters themselves. Reading between the lines of Levitt's (1998) description of social remittance creation, immobilities of migrants in destination areas appear: 'More contact with the host society means greater exposure to its different features...' (p. 93). Time spent or level of social interaction, whether in the destination or the origin (Lacroix, Levitt, and Vari-Lavoisier 2016), hinges upon migrants pausing or becoming established in that place and seeing themselves having a mid- or long-term future in this place (Peth and Sakdapolrak, 2020b). A study of transnational families of Moldova immigrants in Italy found that timing of migration in the life course affects home attachments and thereby the intensity of or extent to which they uptake or transmit social remittances from either or both countries (Cingolani and Vietti 2019a). We are certain that there are many more instances of immobilities in the social remittance pathway.

Conceptual lens: the translocal im/mobility approach

This paper adds a translocal im/mobilities approach to pathways of collective social remittances, specifically in the context of environmental change for two reasons. First, this research aims to diversify this perspective by focusing on manifold types of human mobilities (and corresponding immobilities) that lead to intangible transfers of knowledge, social capital, and ideas beyond only transnational migration. Translocality aims to overcome methodological nationalism by following connections resulting from people's mobilities regardless of distances, borders, or scales and emplacing people's experiences across various spaces (Brickell and Datta 2011). Thus, the translocal im/mobilities lens is added to capture diverse temporal and spatial mobility types, whether internal, cross-border, or international, and connections among origin, transit, and destination areas (Carmo and Hedberg 2019; Datta 2011).

Second, translocality provides an entrypoint for examining how different forms of immobilities are connected to people who are on the move. Translocality refers not only to distances, but also how the translocal setting includes different areas linked through human im/mobilities 'seen as one interconnected space' (Peth and Sakdapolrak, 2020b, 548). Mobilities establish links, or translocal connections, between places and people, including non-migrants. Translocal livelihoods of households develop among migrant and non-migrant members, potentially supporting social resilience to environmental shocks or change (Sakdapolrak et al. 2024). Migrants themselves have periods of stasis within a mobility or migration experience. Thus, im/mobilities lead to translocal embeddedness: periods of immobility build up connections, moorings, and experiences in multiple places (see also Peth, Sterly, and Sakdapolrak 2018). These translocal movements and connections of people also come with material and immaterial exchanges, like social remittances (Greiner and Sakdapolrak 2013).

This leads us to our main research questions, which are: *How do translocal mobilities and immobilities contribute to social remittance formation, transmission, and implementation? What is the role of these im/mobilities and social remittances in responding to climate change in Skoura M'Daz, Morocco?* We answer these questions by focusing on the growing ecotourism sector. In the next pages, we first describe the translocally embedded fieldsite of Skoura M'Daz, our research methods, and the ecotourism setting. We divide results into three typologies of im/mobility interactions (a: establishing embeddedness and place attachment, b: enabling implementation of new ideas, and c: transformation through time and repeated im/mobilities) and consequential social remittances of several key ecotourism actors.

Site and methodology

Our research is based on the commune of Skoura M'Daz in the Fez-Meknes region of Morocco. Nestled in the Middle Atlas Mountains, Skoura M'Daz was selected for its translocal embeddedness through the in- and out-mobilities of its residents, which the first author knew through two years' prior experience living there. According to the 2014 Moroccan census, the population was 8,776, with a quarter living in the central town, and the rest in the approximately 23 villages spread across the mountainsides and valley. Its proximity to Fez means that many families have relatives living in the city, though translocal household members also live around the country in cities like Rabat, Tangier, or Casablanca. More and more youth, especially young women, are attending university in Fez and moving around the country to pursue work opportunities.

Today, Skoura M'Daz remains an agriculture-based community based on olives and carobs. Many families have agricultural lands both in their village areas and in the vast fertile agricultural valley along the Guigou River, once the site of a French model farm under the Protectorate period (1912–1956). The primacy of agriculture has been weakened over the past decades for several reasons: split land inheritances have led to smaller landholdings, family members in

cities no longer depend on their agricultural incomes, and subsistence gardening has tapered off as weekly markets and small grocery stores have provided more variety of dairy products, vegetables, and fruits. However, as previously mentioned, climate change and local environmental changes are now significantly affecting the households who still list agricultural activities as part of their livelihoods (about two-thirds of households according to our survey, described below). Diminishing water resources for irrigation, stemming mainly from drought, are stressing farmers, who are grappling with diminishing yields and subsequent volatile earnings from year to year. Other environmental changes previously mentioned like changes in seasonal timings and erratic precipitation add to the uncertainty.

This mixture of processes—mobilities and environmental changes—makes Skoura M'Daz an engaging case study to understand how transfers of social remittances relate to climate adaptation. From June 2021 to December 2022, the first author conducted 74 semi-structured interviews, 120 household sampling surveys, farm visits, and participant observation in Skoura M'Daz, as well as in the surrounding area and nearby cities.¹ The household sampling survey was distributed based on systematic random sampling in the villages comprising Skoura M'Daz, collecting demographic, migration, livelihood, and agricultural household data. Many interview participants were selected based on survey results. After a set of initial interviews, ecotourism was identified as a specific case study of community-level social remittances. Additional interview participants were then purposively selected, as well as through snowball sampling. In total, 23 people involved in ecotourism were interviewed (Table 1). Some assisted with ecotourism activities, while others centered tourism as a main occupation. These ecotourism actors included small business owners, association and cooperative leaders and members, tour guides, hotel owners, government extension workers in agriculture and forestry, and community activists. Questions included observations of and response to environmental change, outlook for agriculture, mobility histories, reasons for community involvement, tourism projects, and interactions with tourists. Throughout fieldwork, the first author worked with two research assistants from Skoura M'Daz who served as translators and transcribers for Moroccan Arabic (Darija), Tamazight, and English. Interviews were coded and analyzed through ATLAS.ti.

Setting the scene: ecotourism in Skoura m'Daz

Ecotourism has emerged as a growing sector within Skoura M'Daz. The commune is already known in the region as a scenic area for its appealing mountain landscape dotted with waterfalls, as well as for its cultural heritage connected to its indigenous Amazigh background and history of French occupation. Skoura M'Daz is also located in the vicinity of the three tallest peaks of the Middle Atlas Mountains, making it a jumping off point for hiking groups. With agriculture on the decline due to environmental and climatic changes, youth migration, and fragmentation of agricultural lands, among other issues, several community leaders and other interviewed participants touted ecotourism as the best future path for Skoura M'Daz, which they believed would provide income diversification in the anticipation of further climate change. The town now has three maintained hotels, all built within the last 15 years, and three certified mountain tour guides. Some ecotourism entrepreneurs and cooperative leaders were networking with women's cooperatives and local artisans to reignite interest in creating 'souvenirs' and 'traditional' handicrafts that could appeal to tourists.

In the meantime, increasing mobilities of tourists into Skoura M'Daz have also proven ecotourism a fair investment. In summer or for holidays, family members and distant relatives of Skoura M'Daz's residents come to visit, get away from the heat of the cities, reconnect with their roots, or check up on their inherited properties. Tour groups also come from cities like Fez, Rabat, or Casablanca with participants who want to learn traditional Moroccan ways of lives like olive oil production, combine charity work with tourism, or show their children what it was like growing up in the countryside. Sometimes, international tourists come—mostly from

Table 1. Table of interview participants related to ecotourism in Skoura M'Daz.

Interview	Alias	Gender	Age	Occupation/role	Main residence
1	Oussama	M	29	Farmer, volunteer English tutor, research assistant	Skoura M'Daz
2	Ismail	M	45	Tour guide, community activist, farmer	Skoura M'Daz
3	Ali	M	24	Cafe owner, farmer	Skoura M'Daz
4	Moha	M	37	Commune representative	Skoura M'Daz
5	Abdellah	M	32	Secondary school teacher, journalist, community activist	Fez
6	Karim	M	40s	Development organization regional manager	Rabat
7	Faissal	M	38	Wildlife photographer, business owner	Skoura M'Daz
8	Mohammad	M	41	Guesthouse owner	Skoura M'Daz
9	Mehdi	M	47	Marketing and organizational development officer	Fez
10	Driss	M	47	Community leader	Fez
11	Omar	M	50	Community leader, farmer	Skoura M'Daz
12	Lahcen	M	50	Youth and welcome center director	Skoura M'Daz
13	Khadija	F	63	Women's cooperative president, community activist	Skoura M'Daz
14	Samira	F	47	Women's cooperative member	Skoura M'Daz
15	Mina	F	49	Women's cooperative secretary-general	Skoura M'Daz
16	Miloud	M	29	PhD ecology student, secondary school teacher	Fez
17	Latifa	F	30s	Forestry officer	Fez
18	Hoda	F	24	Forestry officer	Boulemane
19	Issam	M	20s	Forestry officer	Missour
20	Achraf	M	27	University student, wildlife photographer	Fez
21	Hassan	M	29	Agricultural counselor	Boulemane
22	Nasser	M	59	Agricultural counselor director	Boulemane
23	Youness	M	27	School counselor trainee	Oujda

Aliases used throughout text to protect the identities of participants.

France, mostly members of the Moroccan diaspora—to spend time in nature and access outdoor activities, like mountain climbing, wildlife photography, and biking (Interviews 2, 7, 8).

Of course, downsides of increasing tourism, such as litter and other pollution, worry some leaders (Interviews 2, 3, 8). Local hotel owner Mohammad described, *'There are types of tourists who are responsible tourists, and tourists of mass, who are the people who create problems. They stay next to springs...They cook there, and they throw everything there. It is a problem, so we have to fix it right now to protect the environment'* (Interview 8). An interview participant Youness invited the first author to a trash clean-up taking place during the week of Eid Al-Adha, a holiday when Moroccans visit family. The point was, Youness said, to set an example for others to follow. Participants emphasized that tourists need to be taught to clean up after themselves and thus why *eco-tourism* is needed, to teach about the importance of protecting Skoura M'Daz's resources and nature. A local community leader Omar explained, *'We encourage responsible tourism. We don't encourage tourism that will pollute the water and forest. Ecotourism is the future of our town, but it is a dream to fulfill it. So if we respect this, it will have a positive impact on Skoura [M'Daz]'* (Interview 11).

There was no single definition of ecotourism from participants, though they discussed varying notions: combining elements of spending time in nature; promoting environmental conservation, sustainability, and climate change education; teaching about local cultural history; developing the town; and bringing in sustainable incomes for local residents (Interviews 1, 2, 8, 9, 10, 11). The desire to do something positive for both tourists and those in Skoura M'Daz was echoed by 47-year-old Mehdi, from Skoura M'Daz and living in Fez, *'We love tourism, we love the environment, we love development, and, when we love something, we create'* (Interview 9). Along with these motivations for tourism projects, participants shared their future plans and how they came to these ideas, revealing entanglements of im/mobilities detailed in the next section.

Results: im/mobilities within collective social remittances

Taking an in-depth look at ecotourism sector development, our results unveil the different forms, types, and outcomes of agents' im/mobilities for collective social remittances. Migrants and

other people from Skoura M'Daz are already on the move, not necessarily because of climate change reasons. Nevertheless, their mobilities, i.e. going to university or working in other places, lead to social remittances that influence responses to environmental change: putting to use what they learned in the development of the ecotourism sector. We first review what types of social remittances are involved in the development of ecotourism in Skoura M'Daz, and then different forms of mobilities, rather than migration, that contribute to such remittances. What we add through this paper is an analysis of the immobilities and local moorings² also comprising these pathways, identifying three ways in which immobilities function, which are a) enabling (trans)local embeddedness, b) building implementation know-how, and c) transforming remittances through repeated im/mobilities across different places.

Social remittances

There were many types of social remittances that could be identified from ecotourism actors' experiences. Values, skills, knowledge, ideas, social capital—each actor talked about one or multiple of these social remittances as they narrated their involvement with tourism. How or where the social remittances were formed ranged from prior work experience and visits to cities, to attending educational workshops. Formation of social remittances through activities like trainings provides an avenue of intentional and deliberate transmission of information.

For example, after having lived for years of his teenage and adult life in various cities around Morocco for work and education, former athlete and current tour guide 45-year-old Ismail returned to Skoura M'Daz and became involved in his village's community association for culture and development, which organized local farming cooperatives and cultural festivals. He initially thought of becoming a guide as a youth when he was living in Ouarzazate, a common city stop for tourists in the Moroccan desert (Interview 2). While volunteering for the local association in Skoura M'Daz, Ismail applied for and attended a guide training in another city, so that the association could host and assist tour groups that were coming to Skoura M'Daz. He learned social values and behaviours important in tourism. The most important thing he learned from the training about dealing with tourists was, *'You should respect people and treat each one according to their personality'*. Timeliness, respect for others, respect for his surroundings—values he also learned from his youth training as an athlete—were what he brought to his job as a tour guide. He aimed to combine agriculture with what he calls solidarity tourism—tourism emphasizing sustainability and connections with local communities and the environment—to pass on his knowledge of traditional methods of farming, Skoura M'Daz's history, and Amazigh culture to tourists. However, social remittances are not created in a vacuum which is why we need to understand the context of im/mobilities from which they emerge.

Human mobilities

From where do the social remittances come? The basis of remittance formation is often the act of migration or physical movement and the exposure to new or different social practices. By physically moving into a different locale, actors encounter new settings, contrasting ideas, or new ways of doing. Mobilities can also lead to transmission. Mobile persons return home for visits or for good, telling friends or families what they learned while away, or bringing with them new skills or social capital. Mobilities are, lastly, also part of implementation, whereby actors from Skoura M'Daz travel to purchase goods and materials needed for ecotourism, or to attend trainings (and therefore acquire new social remittances) for implementation know-how, or to submit paperwork.

One example of how individual mobilities can influence the whole community is the case of Faissal, a 38-year-old wildlife photographer. He had left the town for university and several other

jobs before making Skoura M'Daz his permanent residence. Once his photography career took off, he became mobile again while maintaining his permanent mooring in Skoura M'Daz, traveling to photography fairs, competitions, and conferences, taking part in and now leading photography tours. Faissal's mobilities opened up new possibilities for him, or as he puts it: *'I gained experience. I discovered the differences between my village and other places. You get new ideas from other photographers, and you utilize it. I saw that they had received some training. So I did the same here, so that the hotel and other people in Skoura M'Daz could benefit'*. This shows how individual mobilities and pathways are often interlinked with the community as such. Faissal has started his own guide business for wildlife photography and wilderness survival in Skoura M'Daz, attracting wildlife lovers to the region (Interview 7).

Tourists and outsiders themselves also become agents of social remittances. The research participants likewise highlighted the new ideas they got from conversations with visiting tourists that influenced how they ran their tourism activities. The owner of the first hotel in town, 41-year-old Mohammad, shared how one of his early clients had owned a travel agency. *'I have learned a lot from him'*, Mohammad said. *'We have still worked with him the last eight years'*. Mohammad received ideas from him and other clients to create a cooperative, add dishes to the meal menu, and renovate the guesthouse. They also told their friends about the place, opening avenues for more tourists to come to Skoura M'Daz (Interview 8). Ismail, previously mentioned, reported that he learned about the cultures of the tourists who come through. He said, *'If I learned something, I have to employ it here in Skoura M'Daz, because I'm part of many associations'* (Interview 2). In this way, Skoura M'Daz is not just influenced by out-mobilities of people embedded long-term there, but also from in-mobilities to the town by tourists. However, our research has shown that mobilities are only one part of the context in which social remittances emerge because, without the people being based in Skoura M'Daz with their attachments and local moorings, new ideas and practices would never be implemented, which brings us to the aspect of immobilities.

Immobilities

While the act of mobility is requisite for social remittances, there are immobilities implicit in their pathway. From our case study, three ways immobilities function are identified:

1. Moorings of key actors in different locales establish their translocal embeddedness that enable remittance exchanges.
2. Long-term fixities of translocal connections or of agents themselves boost the capability to implement remittances.
3. In conjunction with mobilities, pauses or short-term stays of actors across origin, transit, and destination areas transform social remittances themselves.

Moorings establishing (trans)local embeddedness

Translocal embeddedness describes the maintenance of social ties across different locales by mobile persons, who have multiple moorings or sites of what they consider home. These moorings are built through not only mobilities of people to and from a place, but also periods of immobilities when they pause, stop, or live in those places. The degree of embeddedness can influence who communicates with whom, which connections they have, what remittances they acquire and transmit, and how they understand different places. In this study, certain key actors in ecotourism no longer live in Skoura M'Daz or surrounding areas. However, they maintain strong connection to and embeddedness in the region and the people there, thus having the ability to pass along or implement social remittances (Interviews 5, 6, 9, 10, 16, 20, 23).

One influential community leader, 47-year-old Driss, for example, was born in but raised outside of Skoura M'Daz, and has maintained strong ties to his and his parents' hometown.

Driss ended up working for the U.S. Agency for International Development (USAID) and later at the German Development Agency [Gesellschaft für Internationale Zusammenarbeit] (GIZ) in Fez as a regional manager. He built networks, skills, and knowledge, which he put to use in bringing resources to Skoura M'Daz and helping with community projects (Interview 10). In November 2021, Driss organized a training on 'Green Jobs' for youth tourism leaders in the region, co-sponsored by GIZ and the Moroccan Agency for Water and Forests and hosted at a hotel in Skoura M'Daz. Many ecotourism actors interviewed for this study also attended the workshop, learning more about guiding and presentation skills, local wildlife, and other professional development resources. Omar, Driss's village development association partner and friend, said about Driss, *'[He] is the window to other places for the association. We have access to information thanks to him. We get updates, and he informs us about governmental and non-governmental programs'* (Interview 11). This example shows how local mooring in the form of place attachment can facilitate the implementation of social remittances.

Having multiple moorings at different places, however, is also key to the formation and motivation of social remittances by proffering the ability to compare and contrast different environments, creating what Karolak (2016) terms potential social remittances. Another translocally embedded actor was 32-year-old Abdellah, a teacher by profession living and working in Fez, but also a community activist, journalist, and tourism actor for the Boulemane province. Though his parents are from El Mers, the commune up the mountain from Skoura M'Daz, Abdellah grew up in Fez, visiting El Mers every summer. He explained, starting from when he was a child, *'the idea began to develop. I started to think about and compare life here in Fez and there in El Mers... I found that there are many problems, so I started to think about what exactly should be done. And at that time, I got internet, which I could exploit'*. This led to his, in high school, starting development and awareness projects for El Mers and the surrounding Boulemane province: creating a blog about El Mers, starting a Facebook page for news on the province, leading tour groups on visits to El Mers, and starting and promoting a tourism club for the region, among many other activities (Interview 5).

The case of Abdellah concomitantly illustrates the role of the digital space for (im)mobilities, which shaped Abdellah's embeddedness across spaces. Even though he has lived most of his life in Fez, his relative fixity is overcome through media, maintaining his connection to El Mers and the greater province. His focus on digital media is clear, as he stated: *'Media is the engine. I believe that it is the fourth branch, so we can introduce El Mers and its surroundings. We brought tourists to help families. And then I wanted to apply the same thing to the entire region, but just on Facebook, so I created Boulemane Press, which represents the province'* (Interview 5). Not only does media fortify his translocal embeddedness, but it also has raised awareness of the area as a touristic site on the national and international stage, directly leading to more people coming to visit. For his future plans, he commented, *'I would build a guesthouse or a hotel in El Mers, and I would always focus on media'* (Interview 5).

Having a mooring in a city allowed Abdellah to gain the skills, ideas, and social networks to enact his projects. He made clear that growing up outside of El Mers afforded him opportunities than he would not have had otherwise growing up. Abdellah remarked, *'What makes me successful is my contacts with people and civil society. It helps me a lot to get experience and network'*. He highlighted a few examples: developing writing skills at university; attending trainings on media and other youth camps with UNICEF, Ministry of Youth projects, the United States Peace Corps, and local associations; and connecting with national journalists who follow his Facebook page. Those opportunities built his capabilities to manage all his activities, including tourism (Interview 5). Thus, translocal embeddedness—enabled through both mobilities and immobilities contributing to multiple sites of moorings—influences the formation, transmission, and implementation of social remittances. This brings us to the aspect of time and long-term perspectives which are also important for the implementation of social remittances.

Actors with long-term fixities building implementation know-how

Non-migrant actors are a crucial—yet often overlooked—part of the social remittance pathway. These contacts may be more deeply embedded in the daily goings-on in the origin through longer-term fixities there. They have everyday interactions that boost remittance transmission, and they build connections with others who could assist in implementation (Interviews 1, 2, 3, 7, 11).

Social remittances from mobile persons have the potential to be implemented due to this deeper embeddedness of actors with relative mooring. For years, translocal leader Driss, described in the previous section, has worked from his base in Fez with 50-year-old Omar, who has stayed in Skoura M'Daz ever since graduating from university in the early 1990s, working as a community organizer, association leader, and now elected commune official. Their partnership, of Driss bringing outside resources and contacts, and Omar having long-standing community relationships and know-how to get things done in Skoura M'Daz, has led to multiple successful projects (Interviews 10, 11). In fact, Driss highlighted Omar's work and experience: *'Omar is our leader in Skoura [M'Daz]. Without Omar, I [wouldn't] be able to work. Why? Because Omar is every day behind-the-scenes. I remember a time when Omar was responsible for four big organizations at the same time... To me, he is a hero'* (Interview 10).

Both of them have provided complementary areas of expertise as mentors to two youth leaders who started an ecotourism cooperative in summer 2021. Omar's long-term residence and community involvement in Skoura M'Daz is a considerable asset, in addition to Driss's experience and networks from outside Skoura M'Daz (Interviews 10, 11). But Driss made clear: the ecotourism cooperative would only succeed if the youth leaders were committed to settling in Skoura M'Daz. Said Driss, *'[The cooperative leader, Oussama] needs pressure, because it is a condition. I asked him, will you stay and work? If yes, we can build stuff'* (Interview 10). The youth leaders' own relative mooring—remaining in Skoura M'Daz rather than migrating away—would ensure the cooperative's longevity.

Actors who maintain long-term mooring in one place are also mobile themselves and acquire social remittances. While wildlife photographer Faissal's mobilities were spotlighted in the previous section, his long-term residence in Skoura M'Daz underpins his success. It was his hiking and camping in the surroundings in Skoura M'Daz while growing up and returning after university that built his expertise and photography portfolio on wildlife in the area. He continues to bring in tourists, contribute to local trainings, take photos for other touristic businesses in Skoura M'Daz, train several community youth as photographers and assistants, and work with the local schools to educate youth on the environment. He has used his connections to bring and guide media crews, including the well-known documentary program Amouddou, to feature Skoura M'Daz. *'I do this from the heart'*, he explained; *'I'm from here... we make something for free, for our village... if this will help my town'*. He has introduced many ideas that could help develop and market the area for tourism, hoping that the local government will make tourism a priority (Interview 7).

During periods when Faissal physically stayed in Skoura M'Daz, digital mobilities on social media expanded his repertoire. By being a member of or posting in over 500 different Facebook groups related to wildlife or photography, he believed that he had changed perceptions of Morocco's wildlife diversity and inspired some interested parties to come visit him in Skoura M'Daz or take his tours of desert regions. He learned about new outdoor equipment and photography editing techniques from YouTube. Thus, Faissal's relative fixity in Skoura M'Daz belied these digital mobilities and his periodic traveling mobilities (Interview 7).

In contrast to Faissal, perceived lack of belonging due to migrant status can inhibit embeddedness and thus others' willingness to cooperate on ecotourism activities. Guesthouse owner Mohammad was born and grew up in the nearby city of Sefrou. He moved to Skoura M'Daz in 2010 after studying English at university to start the guesthouse on inherited land from his

grandfather, whom he had often visited as a child. His ecotourism idea, sharing the nature and local culture of a mountain area, came from a university course. As the first hotel owner in town, Mohammad had a strong presence in the tourism sector, hosting tourists whom Faissal or Ismail guide and mapping biking and trekking trails through the mountains. However, despite over a decade living and working in Skoura M'Daz, he was still viewed as an outsider (Interview 8). This status had hindered his attempts to partner with other actors, who were sometimes hesitant to collaborate with him and viewed him as a competitor. This treatment stood in contrast to that of translocally embedded actors who have lived long-term outside of Skoura M'Daz, but laid claim to community belonging through birth. Therefore, subjective perceptions of mobility and immobility, and corresponding degree of embeddedness, has bearing on the collective growth of ecotourism.

Transformation of remittances through intermittent pauses

As seen from the prior examples, social remittances come about through and are enacted from both human mobilities and forms of immobilities. This section emphasizes the transformation of remittances themselves through actors' im/mobilities. As people pause in multiple places, an initial remittance may change or influence the acquisition of new remittances. An initial remittance may combine with ideas or knowledge an actor formed somewhere else, or it may inspire further action or im/mobilities that provide foundations for different remittances. Social remittances become the result of a web of interactions, not necessarily between a binary of origin and destination places.

The development of Oussama's ecotourism cooperative, mentioned previously, provides an example of connections formed through both mobilities and periods of stasis or stopping in different places, and the resulting transformation of a social remittance. One 47-year-old participant, Mehdi, was from Skoura M'Daz but was living in Fez. Twenty years ago, in a Master's course in Tangier, he learned about sustainable development, making him wonder how this concept could be applied in Skoura M'Daz (Interview 9). He returned to Fez and met with his friend Driss (previously introduced) about what kind of project could help Skoura M'Daz. In turn, Driss drew on his experiences traveling around the region seeing other examples of tourism activities. They established an ecotourism association to start sustainable development initiatives in Skoura M'Daz (Interviews 9, 10). While that project soon died out, Mehdi's younger brother Oussama was inspired by these ideas 15 years later, motivated by the environmental changes he saw, and desiring to use his English and teaching skills he had learned in university (Interview 1). He and his friend Ali founded their own ecotourism cooperative in 2021. Since then, they have created a Facebook page, built their Instagram accounts advertising Skoura M'Daz (now with about 5,000 followers each), passed national exams to become official mountain tour guides, organized tour circuits, and selected a building owned by Ali's family to develop into a souvenir and local handicrafts shop. Overall, the first social remittance of Mehdi's—learning about sustainable development from his class—took shape as ecotourism through additional mobilities and a short stop meeting a friend in Fez. Patterns of movement and pausing or halting connected the places of Tangier, Fez, and Skoura M'Daz, initiating flows of social remittances.

Skoura M'Daz plays a role not just as an origin area but also a destination and a transit place for mobile persons, where social remittances at different points in the pathways meet and interact with each other. Vice versa, other places, too, function not only as destination areas, but also as origins. Abdellah, the community activist living in Fez, attended the 'Green Jobs' training in Skoura M'Daz. The workshops reinvigorated his work in tourism. He explained (Interview 5):

After the training, which was organized by Driss, I had a vision of alternatives. For example, my uncle has 20 sheep, and he lives in the mountains. Raising animals was affected by climate change, so it is no longer useful. Therefore, we need to work on tourism, or planting trees, such as the funding program of the Forestry Agency, which Driss is a part of [through the Association of El Harche].

The training resulted from Driss bringing his social remittances built through his translocal embeddedness. Abdellah took his prior experience with tourism—built from new skills and networks he developed through translocal embeddedness—and combined it with the new knowledge he learned from the training. Social remittances interconnected and built upon each other, becoming transformed through im/mobilities. Overall, an im/mobilities perspective reveals the web of social remittances being transferred across interconnected places, interacting with each other, and ultimately becoming transformed from the initial remittance.

Discussion

An im/mobility perspective for social remittances

This article has sought to add to social remittance literature by analyzing how different forms of human immobilities and moorings comprise the social remittance pathway. In past research, social remittances have been described as based around migration experiences, for which movement plays a central role. As we found, long-term fixities, moorings, and pauses during travels contributed to the formation, transmission, and implementation of social remittances in the case of ecotourism in Skoura M'Daz, Morocco. The im/mobility perspective opens up another dimension of analysis to examine how both human mobilities and immobilities are 'profoundly relational and experiential' (Adey 2006, 83) throughout a social remittance pathway.

Physical human im/mobilities are linked to the intangible im/mobilities of social remittances themselves. Non-migrant contacts are key players in the implementation of social remittances from mobile actors. Social remittances become mobile and travel further away from the remittance sender thanks to non-migrants. Individual social remittances turn into collective social remittances. Other studies substantiate these findings, such as the case of Thai marriage migrants in Germany transferring a new safety awareness and sense for financial future planning. Here a number of the transnational migrants registered their close relatives for health insurances after they had observed that insurances are more commonly used in Germany. Other family members and neighbors in the village became aware of the insurance policies and started to reflect about risk protection (Peth and Sakdapolrak 2020a, 83–85).

The maintenance of translocal embeddedness and moorings puts into motion transmission or implementation of social remittances, potentially overcoming the so-called 'ossification effect' (Boccagni and Decimo 2013). Levitt and Lamba-Nieves (2011) explain how international migrants' memories and priorities differed from origin community members' realities. In a way, their perception of the origin stayed fixed from when they originally emigrated from the community. As found in our case, frequent communication or collaboration of translocal actors with non-migrant contacts with implementation know-how could limit this effect and instead boost successful remittance transfers.

Social remittances gathered through people moving or pausing are transformed and utilized for application through combining disparate sources of information and experiences. Trainings, prior expertise, digital learning, and social media become entangled with social remittances, not only shaping how they are formed, but also how they are interpreted, engaged with, and implemented. Adding other actors to the mix reveal further entwinement with other remittances related to climate adaptation (Diniega 2024). Previous social remittance authors have stated that remitters or receivers may reshape or adapt remittances themselves, for example realizing what elements may work in their respective settings (Garapich 2016; Grabowska et al. 2017;

Mata-Codesal 2011). This article adds how remittances can be changed through additional information gathered through people's im/mobilities through other settings across origin, transit, and destination areas, which we turn to next.

Spatial dimensions of social remittances

In this research study, the translocal perspective demonstrated how social remittances came together as linked webs of mobilities and immobilities, both human and intangible. Instead of a clear origin-destination dichotomy, Skoura M'Daz was translocally embedded as an all-at-once origin, destination, and transit area, having connections to multiple other places through people's im/mobilities. For example, ecotourism principles, values, and ideas traveled into Skoura M'Daz as an origin area with translocal actors or non-migrants who traveled away for short periods. At the same time, tourists visited the commune as a destination area bringing their own behaviors and knowledge. The 'Green Jobs' training made Skoura M'Daz a transit of remittances from out-of-town experts to regional youth working in tourism. Social remittances from each of these sources built upon each other. In the end, these entanglements of mobilities, immobilities, and social remittances comprised a translocal constellation surrounding ecotourism in Skoura M'Daz. Thus, a social remittance pathway can be not only linear, linking an origin and destination, but multi-embedded.

One additional element our study revealed was how digital mobilities created transglobal connectedness with people and information around the world that augmented social remittance formation, transmission, and implementation. Digital mobilities as through social media or blogging allowed ecotourism actors to cultivate moorings, build social networks, and encounter transglobal communities otherwise out of reach. Digital mobilities do not necessarily lead to social remittances, as, after all, social remittances are defined as person-to-person information exchanges (Levitt 1998). However, digital mobilities through mediating technology can be key to the social remittance pathway, as when migrants text family members or communicate over social media or television news segments (Boccagni and Decimo 2013; Levitt and Lamba-Nieves 2011). Media can also help maintain translocal embeddedness or facilitate implementation, like agents looking up supplementary how-to information for building drip systems (Diniega & Sakdapolrak, forthcoming). Nevertheless, more research could conceptualize how to distinguish social remittances influenced or transformed by multiple sources, compared to other circulating intangible flows.

Collective social remittances for adaptation

In our ecotourism case study, an acceleration of social remittance effects occurred over time as more and more people became involved. Many ecotourism projects or action started as household- or business-level remittances—someone starting his own hotel, or another actor attending far-away conferences before starting a business, or a friend sharing what he heard about with another. Today, however, there is a loosely connected constellation of ecotourism actors, including the new ecotourism cooperative, individual businesses, and social networks. Moreover, in settings like the 'Green Jobs' training, ecotourism ideas were shared in an organizational setting as a collective social remittance affecting household- and business-level remittance implementation. Thus, remittances scaled up from individual to collective social remittances (Levitt and Lamba-Nieves 2011). Instead of distinct areas of impact, the levels can be seen as overlapping categories or even as a spectrum. Interplays between these levels—individual, household, business, collective, or beyond—could be further examined.

Collective social remittances—formed from the gradual layering of individual efforts into collective action or shared in community settings—is found in other cases of social remittances contributing to climate adaptation (Diniega and Sakdapolrak 2025). For example, immigrants' agricultural

experimentation in the Australian region of Sunraysia spread to other households who witnessed the benefits of the changes, leading to broad-scale shifts in agriculture. Even today, this continued knowledge transfer from migrants could enhance adaptive capacity, even if the initial practices are not intentionally for adaptation purposes (Klocker et al. 2018). Another example from Morocco explains how transnational migrants shared their ideas about adaptation when helping to design community projects in their origin region of Tinghir (Van Praag 2021). In our paper, ecotourism efforts combined are pointing towards a long-term adaptive strategy for the local economy in the face of environmental change. Whether these are successful or far-reaching for the broader community remains to be seen. However, the implications of this study show how social remittances, particularly at the community level, could be studied as part of migration-as-adaptation literature.

Conclusion

This paper adds to ongoing debates in two ways. First, it advocates for the further consideration of immobilities, fixities, periods of staying, pauses, and moorings in the field of social remittances. Not only are remittances formed from migration between origin and destination communities, but also from im/mobilities of translocally embedded actors. More research applying a translocal im/mobility lens to social remittance studies would advance their conceptualization regarding spatialities and geographies.

Second, our case study demonstrated remittance implementation for ecotourism development, with actors responding to and viewing impending environmental change as a motivating factor. Social remittances thus can act as an intermediary in the migration-as-adaptation line of inquiry, making them a salient topic for both researchers and policymakers who work on the nexus between climate change and human mobilities. In Morocco specifically, policies promote in-situ development to discourage rural out-migration, yet this study indicates how social remittance flows could potentially have positive benefits for climate adaptation in origin areas. Mobility justice and other insights from the mobilities paradigm could help examine uneven and unequal im/mobility related to social remittances in the context of climate change.

Notes

1. The authors applied and received ethics approval from the University of Vienna Ethics Committee prior to the start of the research project. Number: 00631. All participants were provided and signed consent forms.
2. Our understanding of moorings builds on Hannam et al. (2006) conceptualization of moorings, emphasizing that mobilities cannot be understood without attention to the 'spatial, infrastructural, and institutional moorings that configure and enable them' (p. 3). These moorings produce what was termed 'spatial fixities' which stabilize movement within broader socio-economic structures (Hannam et al. 2006).

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ORCID

Rachael Diniega  <http://orcid.org/0000-0002-7324-4749>
 Simon A. Bunchuay-Peth  <http://orcid.org/0000-0003-2553-1505>
 Patrick Sakdapolrak  <http://orcid.org/0000-0001-7137-1552>

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